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January 1936

Test 264: Farmall F-20

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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 264

Dates of test: July 20 to 29, 1936.

Name and model of tractor: McCORMICK-DEERING FARMALL F-20

Manufacturer: International Harvester Company, Chicago, Illinois.

Manufacturer's rating: NOT RATED.

B R A K E H O R S E P O W E R T E S T S

H. P.	:Crank : :shaft :	Fuel Consumption : Gals. : H. P. : Lbs. per :	Water Consumption : per hour gallons :	Temp. : Deg. F. :	: Barometer : Inches of : Mercury
:	: R.P.M. : per : hour :	: hrs. per : H.P. : : gal. : hour :	: Cool- : In : : ing : fuel : Total : : : : : : med. : :	: Cool- : : ing : Air :	:

TEST B 100% MAXIMUM LOAD. TWO HOURS

27.97	: 1200	: 3.114	: 8.98	: 0.768	: 0.037	: 0.000	: 0.037	: 209	: 94	: 28.640
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TEST C OPERATING MAXIMUM LOAD. ONE HOUR

26.78	: 1200	: 2.728	: 9.82	: 0.703	: 0.037	: 0.000	: 0.037	: 207	: 85	: 28.665
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TEST D RATED LOAD. ONE HOUR

25.72	: 1199	: 2.661	: 9.67	: 0.714	: 0.066	: 0.000	: 0.066	: 208	: 88	: 28.710
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TEST E *VARYING LOAD. TWO HOURS

25.81	: 1203	: 2.661	: 9.70	: 0.711	: --	: --	: --	: 208	: 88	: --
0.84	: 1374	: 0.983	: 0.85	: 8.071	: --	: --	: --	: 204	: 88	: --
14.33	: 1331	: 1.974	: 7.26	: 0.951	: --	: --	: --	: 207	: 90	: --
26.38	: 1190	: 2.730	: 9.66	: 0.714	: --	: --	: --	: 208	: 91	: --
7.36	: 1360	: 1.413	: 5.21	: 1.325	: --	: --	: --	: 207	: 91	: --
20.39	: 1304	: 2.457	: 8.30	: 0.831	: --	: --	: --	: 207	: 92	: --
15.85	: 1293	: 2.036	: 7.78	: 0.886	: 0.024	: 0.000	: 0.024	: 207	: 90	: 28.760

*20 minute runs. Last line is average for two hours.

D R A W B A R H O R S E P O W E R T E S T S

H. P.	: Draw : : bar :	Speed : : miles :	Crank : : shaft :	Slip : : on :	Fuel Consumption : H. P. : Lbs. :	Water: : used :	Temp. : :	: Barometer : Inches of : Mercury
:	: pull : : pounds :	: per : hour :	: speed : : R.P.M. :	: drive: : wheels :	: Gal. : hour : : per : per : : hour : gal. :	: per : : H.P. : : per : hour :	: Cool- : : ing : : med. : :	:

TEST F 100% MAXIMUM LOAD. Third GEAR.

20.47	: 2052	: 3.74	: 1202	: 5.57	: -----	: Not Recorded	: -----	: 209	: 98	: 28.815
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TEST G OPERATING MAXIMUM LOAD

18.76	: 2799	: 2.51	: 1203	: 12.14	: -----	: Not Recorded	: -----	: 208	: 99	: 28.820
18.97	: 2307	: 3.08	: 1201	: 8.56	: -----	: " "	: -----	: 209	: 93	: 28.715
18.68	: 1896	: 3.70	: 1203	: 6.82	: -----	: " "	: -----	: 209	: 96	: 28.710
18.20	: 1547	: 4.41	: 1198	: 4.38	: -----	: " "	: -----	: 210	: 98	: 28.710

TEST H RATED LOAD. TEN HOURS. Third GEAR.

16.60	: 1668	: 3.73	: 1200	: 5.12	: 2.528	: 6.57	: 1.051	: 0.059	: 208	: 77	: 29.015
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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
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Copy of Report of Official Tractor Test No. 264

BRIEF SPECIFICATIONS

MOTOR: Make Own Serial No. FA-59794 Type 4 cylinder, vertical
 Head I Mounting Crankshaft lengthwise
 Bore and stroke: 3 3/4" x 5" Rated R.P.M. 1200
 Port Diam. Valves: Inlet 1.562 Exhaust 1.562
 Belt pulley: Diam. 15 1/4" Face 6 1/2" R.P.M. 654
 Magneto Own Model F4
 Carburetor Zenith Model K-5 Size 1 1/4"
 Governor Own No. -- Type Centrifugal
 Air Cleaner Own Type Oil-washed, wire-filter
 Lubrication Circulating splash

CHASSIS: Type 4 wheels, 2 drivers Serial No. FA-59794 Drive Enclosed gear
 Clutch Own Type Single-plate, dry Operated by Foot pedal
 Advertised speeds, miles per hour: First 2.25 Second 2.75
 Third 3.25 Fourth 3.75 Reverse 2.75
 Drive wheels: Diam. 42" Face 12"
 Lugs: Type Spade No. per wheel 12 Size 3 1/2" face x 5" high
 Seat Pressed steel
 Total weight as tested (with operator) 4400 pounds.

FUEL AND OIL:

Fuel	<u>Distillate</u>	Weight per gallon	<u>6.90</u> pounds.
Oil	<u>S.A.E. Viscosity No. 40</u>		
	Total oil to motor	<u>3.204</u> gallons	The oil was drained to the middle crankcase petcock after each 10 hours of operation and 2 quarts of new oil was added. The oil was completely drained at the end of the test.
	Total drained from motor	<u>4.901</u> gallons	
	Total time motor was operated	<u>50</u> hours	

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLNCopy of Report of Official Tractor Test No. 264REPAIRS AND ADJUSTMENTS

During the limber-up test it was found that the hook on one end of the clutch pedal return spring was broken. The end of the spring was bent to form a new hook.

REMARKS

All results shown on page 1 of this report were determined from observed data and without allowances, additions or deductions. Tests B and F were made with carburetor set for 100% maximum horsepower. These figures were used in determining the ratings recommended by the A.S.A.E. and S.A.E. tractor rating codes. Tests C, D, E, G and H were made with an operating setting of the carburetor (selected by the manufacturer) of 95.7% of maximum horsepower.

Observed maximum horsepower (tests B & F) Drawbar 20.47 Belt 27.97

Sea level (calculated) maximum horsepower Drawbar 22.03 Belt 30.15
(Based on 60° F. and 29.92" Hg.)

Highest permissible horsepower ratings Drawbar 16.52 Belt 25.63
(As recommended by A.S.A.E. and S.A.E. codes)

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 264.

Carlton L. Zink

Engineer-in -charge

E. E. Brackett

C. W. Smith

L. W. Hurlbut

Board of Tractor Test Engineers